

State of Hawai'i  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Aquatic Resources  
Honolulu, Hawai'i 96813

April 8, 2016

Board of Land and Natural Resources  
Honolulu, Hawai'i

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National Monument Conservation and Management Permit to Dr. Frank Parrish and Ann Garrett, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, for Access to State Waters to Conduct Shark Removal Activities

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument conservation and management permit to Applicants Dr. Frank Parrish, Chief of Protected Species Division, and Ann Garrett, Assistant Regional Administrator for Protected Resources, of the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service, pursuant to § 187A-6, Hawai'i Revised Statutes (HRS), Chapter 13-60.5, Hawai'i Administrative Rules (HAR), and all other applicable laws and regulations.

The conservation and management permit, as described below, would allow entry and management activities to occur in Papahānaumokuākea Marine National Monument (Monument), including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following site:

- French Frigate Shoals

The activities covered under this permit would occur between June 1, 2016 and May 31, 2017.

The proposed activities are a continuation of work previously permitted and conducted in the Monument since 2010.

INTENDED ACTIVITIES

The Applicants propose to conduct management activities for the conservation of Hawaiian monk seals, include the removal of predatory sharks at selected pupping sites. The proposed activities would support the recovery of Papahānaumokuākea Marine National Monument's endangered Hawaiian monk seals by reducing the likelihood of shark predation on seal pups at French Frigate Shoals (FFS). This activity, when combined with other conservation efforts, would help address the problem of low juvenile seal survival, a factor identified as one of the main causes of Hawaiian monk seal population decline in the Monument. Increased survival of pups is necessary for the species' recovery. Monitoring of shark activity at FFS, to be conducted

to inform shark removals, is included within the Co-Trustee Conservation and Management permit, PMNM-2016-001.

Applicants aim to remove a maximum of seventeen (17) sharks between May 15, 2016 and May 14, 2017 within a 700-meter distance from shore and depths of approximately 25 feet. This depth is required for the efficiency of the bottomset and drum-line gear methods proposed. Shark removals would be limited to Galapagos sharks (*Carcharhinus galapagensis*), as they are the only shark species that staff of the Hawaiian Monk Seal Research Program (HMSRP) has positively identified pursuing, injuring or killing pups during observations over the last 10 years. Fishing efforts will focus on capturing Galapagos sharks displaying the unique predatory behavior of killing Hawaiian monk seal pups.

The Applicants propose to remove Galapagos sharks (tail length of 200 cm or greater) within 700 m of selected pupping sites. Sharks would be caught by the following methods: 1) hand line, 2) hand-held harpoon, 3) drum-line and/or 4) small 10 hook bottomset. For all methods, hooked Galapagos sharks would be brought into shore, or alongside a small boat, tail roped and humanely killed with a bangstick. Shark carcasses would then be examined (gross necropsy) and sampled on-site for future scientific analysis (isotope, fatty acid, genetic analysis). Current guidance from the Native Hawaiian community is that shark remains not used as bait would be returned to the ocean outside the atoll (at least 0.5 miles seaward from the FFS breaking reef.)

Bait for proposed fishing activities would include large tuna heads (brought from outside the Monument), shark remains (from individuals caught from proposed activities), and seal remains (from deceased individuals at FFS and from deceased individuals outside PMNM). Bringing seal tissue from outside the Monument is meant to ensure that there is tissue available to use for bait as there may not be the opportunity to collect tissue from a deceased seal at French Frigate Shoals. Fishing will only occur during daylight hours and if Galapagos sharks exhibiting predatory behavior are nearby. Soak time for all bait would be limited to one to three hours.

The activities proposed by the Applicants directly support the Monument Management Plan's priority management need 3.2 - Conserving Wildlife and Habitats, 3.2.1 - Threatened and Endangered Species Action Plan, activity TES 1.6 - Reduce shark predation on monk seals. In addition, monitoring shark activity and removing sharks are both listed in the Hawaiian Monk Seal Recovery Plan (NMFS 2007) as necessary activities, critical to the species' recovery.

The activities described above may require the following regulated activities to occur in State waters:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- ☒ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
- ☒ Anchoring a vessel
- ☒ Discharging or depositing any material or matter into the Monument
- ☒ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument

☒ Attracting any living Monument resource

### REVIEW PROCESS

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA).

The application was also sent to the PMNM Native Hawaiian Cultural Working Group (CWG) Permits Sub-Committee for comment. Comments received from the group are listed in the comments section for "Native Hawaiian community." Although, no comments were received in 2016, the CWG is interested in engaging in discussion with Hawaiian monk seal researchers. Outcomes of the discussion will be incorporated as appropriate and included in future BLNR submittals.

In addition, the permit application has been posted on the Monument Web site since February 12, 2016, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

### **Comments received from the scientific community are summarized as follows:**

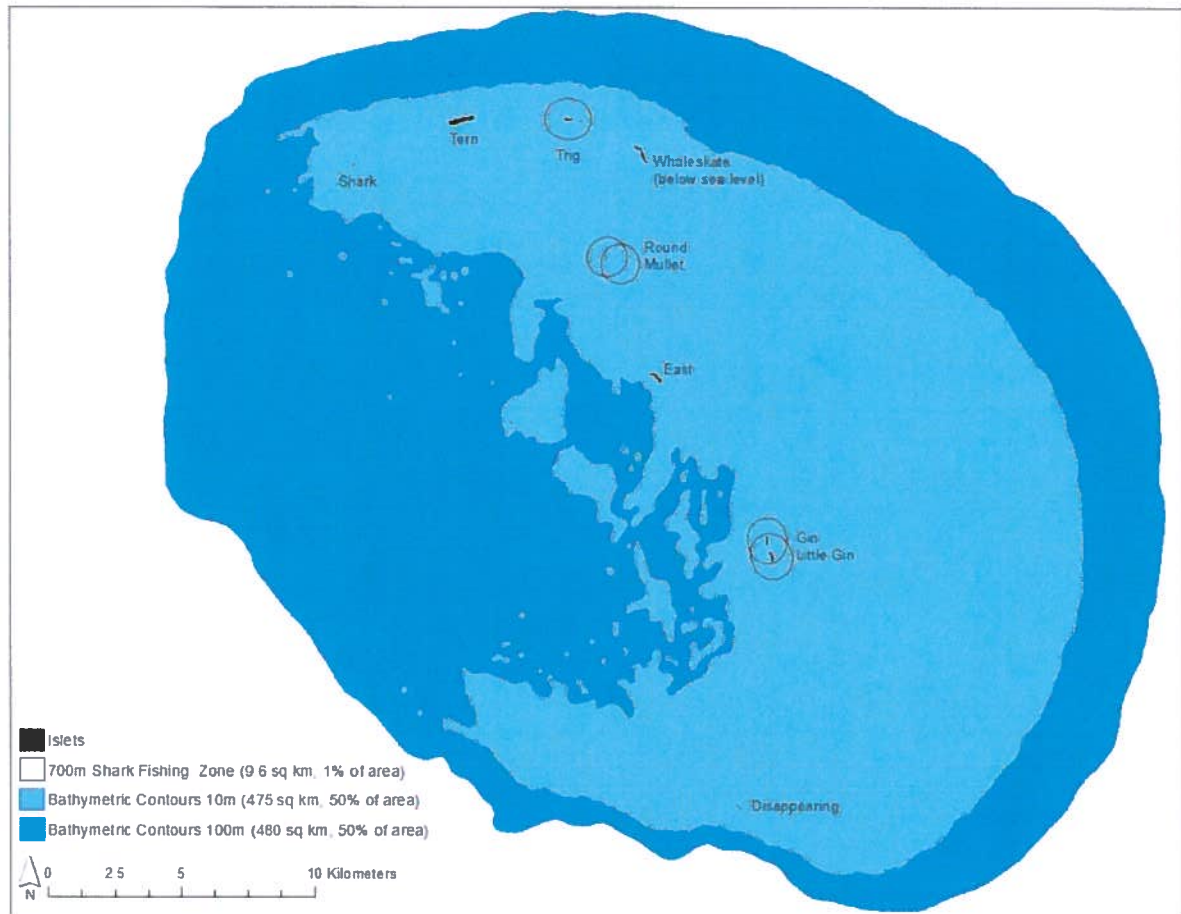
Scientific reviews support the acceptance of this application.

### **QUESTIONS:**

1. What proportion of shallow water does this add up to from the four sites listed?

The Applicant responded with:

*It is unclear what is meant by shallow water but for this exercise we have broken down the atoll into two depth ranges. The first is 10 m and shallower (which represents "inner-atoll") and 10 m – 100 m (which represents deeper waters within the atoll and of the surrounding shelf). This deeper habitat is what is generally considered the typical habitat used by Galapagos sharks. If everything from the 100 m bathy-line and shallower is included then our fishing areas represent 1% of the total area. If we only include 30 m and shallower then it would be 2% of total habitat.*



2. Related to Page-18 under item 9-b: please further elaborate why there is a requirement to store samples but release these until 15-20 individual Galapagos sharks are collected? If this sample size is not maximized, will requesting scientists still receive samples?

The Applicant responded with:

*Any requesting scientist with a bona fide research need can request the samples and receive that at any time (assuming MMB and PIFSC HMSRP approval). If the analysis is destructive and requires most or all of the sample to be lost then there will need to be a discussion of which scientific question is a priority. We are holding off on shipping the samples to our partners to be efficient as opposed to sending one sample off every couple of years. The researchers we have identified in the permit application are not requesting the samples, they are just the group that will be interested in analyzing them when the time is appropriate. If another group wants to conduct the same analyses and has the funds to complete the analysis then we would be happy to go through the process to share the samples with them.*

3. If there is a request for a smaller sample size, is it possible to receive it sooner for CoTrustee conservation and management purposes?

The Applicant responded with:

*See above. As long as they demonstrate it is a bona fide research need, have the expertise, commit to data sharing requirements and have funding.*

4. What are the requirements for a Co-Trustee to request for samples?

The Applicant responded with:

*Transferring collected samples to any organization or individuals would be covered under the PMNM permit (if approved). Organizations/personnel listed in item 9-b of the permit application would be included in the permit (if approved). Any organizations/personnel that are included in the permit for transferring samples should work directly with the permittee(s) for obtaining samples.*

5. Is it possible to present a list of the 35 organizations & individuals that were notified (application page 10 second paragraph)? Is it correct that none of the original 35 organizations or individuals have been notified upon the renewal of this permit each year? I just wonder if during any of their shifting priorities or changing perspectives, there might be an opportunity to learn something new each year.

The Applicant responded with:

*The approximately 35 organizations and individuals that we have engaged with regarding this activity include a variety of local and national non-government organizations, State and Federal government agencies, and individuals, primarily Hawaiian cultural practitioners and community leaders. Through numerous email updates, discussions at meetings, social media postings, and other communication mechanisms, we are confident that these and other interested parties continue to be aware that the activity is among our top priorities for monk seal recovery and that we continue to conduct the activity every year under permit. A partial list of the non-government organizations that were advised of our activities includes all of the 16+ members of the Aloha Kanaloa Coalition (list included at this website: <http://www.alohakanaloacoalition.org/>). Government agencies notified include various offices and programs of NOAA, USFWS, and the State of Hawaii, DLNR. Without more compelling rationale, we can not list the identities of the numerous individuals with whom we discussed this activity due to privacy and other concerns. Most recently, the activity was discussed at the Hawaiian monk seal recovery team meeting and it has been referenced among other priorities during the public roll-out of the Species and the Spotlight 5-Year Action Plan for Hawaiian monk seals ([http://www.fpir.noaa.gov/PRD/pir\\_spotlight\\_hawaiian\\_monk\\_seal.html](http://www.fpir.noaa.gov/PRD/pir_spotlight_hawaiian_monk_seal.html)). While we have not been notified of any significant "shifting priorities and changing perspectives" among any of the relevant parties, we stand ready to discuss should this occur.*

6. Within the NOAA Fisheries Responses To: PMNM Permit Application Reviewer Questions and Comments for PMNM-2015-009 Parrish/Garrett NOAA-NMFS-PIFSC/PIRO (dated 3/16/2015), the applicants had responded to question 10 as PIFSC being able to compile a folder of pdf of all cited scientific literature if desired. Has PIFSC compiled a folder of pdf documents of the cited scientific literature? If not, can this be done and made available to the CWG and the public? Thank you.

The Applicant responded with:

*We can compile a document with links to all the relevant literature so that abstracts can be reviewed. For those we have access to for free (NOAA docs, open-access, or existing journal subscriptions) we will create a printed packet of the manuscripts that can be reviewed. We will not be able to disseminate electronic versions of journal manuscripts that are protected by copyright and prohibited from open distribution.*

7. Are there current surveys 2010-2016 that document the same amount of sharks preying upon or attacking monk seal pups, or are the proposed numbers (17 Galapagos sharks) based on previous surveys before 2010 that estimated about 20 sharks were displaying this specific behavior?

The Applicant responded with:

*No. We take photos of dorsal fins when possible but the general behavior of the sharks is more cryptic now. The brazen "patrolling" behavior demonstrated by the sharks that allowed easy photo documentation of dorsal fins is rare now and a large component of the dorsal fins are, and always have been, lacking in notches that allowed for individual ID. On rare occasion a re-sight is made of a known individual at Trig, so we know some of the animals are still participating in the behavior. Meyer et al. proved with their shark tracking work that only a small percentage of sharks visit these shallow water habitats. Based on re-sights of individuals over the years and the small proportion of the Galapagos sharks demonstrating this behavior it is reasonable to conclude it is largely the same group of animals. This will be tested by additional removals.*

#### COMMENTS / RECOMMENDATIONS:

1. The NWRS requests to be listed as recipients for samples as listed on Page-18 under item 9-b: Analysis for environmental contaminants at French Frigate Shoals (USFWS).

The Applicant responded with:

*That sounds fine we would just require a name and contact details to include in the final permit. Also, this does not guarantee that samples will be provided to the requested person/agency. As discussed per standard PIFSC HMSRP sample transfer processes we require a research plan, funding availability, data sharing agreements etc. to be established before samples were transferred.*

2. I commend NMFS for their recognition of the significant progress that the Native Hawaiian Community cultural liaison contractors brought to the process. Has NMFS identified this position as a priority for future work given the significant progress and success they brought to the process? Simply expressed, I think that there is a long-term need when considering place-based management in Hawai'i and we should all apply ecosystem-management to the interactions and relationships that guide the process.

Perhaps Native Hawaiians can be viewed as indicator species or keystone species within the broader context of stakeholder/right-holder engagement. My point is that indigenous people used nature, their particular environment, as the primary model for cultural structuring. And there is immense ancestral knowledge and commitment to this. As Nainoa Thompson said, "Every time we lose another Hawaiian plant or animal, we lose a part of our culture." There is absolutely more to be said about the process though and I look forward to future discussions on this matter. I will await the proper protocols to proceed.

The Applicant responded with:

*NMFS has been fortunate in recent years to be able to add staff with Hawaiian cultural background and expertise. These staff work within our office in many different capacities, and while not the primary focus of their jobs, they have been, and will be, available to provide advice and guidance on cultural topics relevant to the shark predation mitigation activity and other activities conducted in the Monument. Current funding levels do not allow for the (re)hiring of the type of cultural liaison staff person or contractor referenced in the comment, however, we also look forward to future discussions about how we can build on our success thus far and further enhance our capacity in this regard.*

**Comments received from the Native Hawaiian community are summarized as follows:**

No comments were received from the Native Hawaiian community on this application.

**Comments received from the public are summarized as follows:**

No comments were received from the public on this application.

**Additional reviews and permit history:**

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g., MMPA, ESA, EA) Yes ☒ No ☐

If so, please list or explain:

- ☐ NMFS ESA/MMPA Research and Enhancement Permit 16332-00.
- ☐ A request for an informal consultation pursuant to Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §1531 *et seq.*) is underway to analyze the effects of proposed activities within the Monument on protected species and designated monk seal critical habitat. The outcome of this consultation may require the applicant to adhere to other NMFS-prescribed conditions. Such conditions would be reflected in the PMNM permit, prior to issuance.
- ☐ NMFS 2007. In 2007 the NMFS Pacific Islands Regional Office (PIRO) consulted on proposed shark fishing procedures at French Frigate Shoals—procedures which included monitoring seals and deploying fishing gear including anchored equipment. In the analysis, NMFS PIRO determined that 1) disturbance from humans and equipment to protected species is temporary and insignificant and does not exceed those actions previously consulted on; 2) the likelihood of an entanglement or hooking with a protected



species is discountable; 3) the likelihood of a vessel colliding with a monk seal or green turtle is discountable; and 4) a potential exists for beneficial effects from the project to monk seals. The PIRO concurred that the project was Not Likely to Adversely Affect ESA-listed Hawaiian monk seals and green turtles, and would have no effect on designated critical habitat (Letter of concurrence dated July 24, 2007).

- NMFS 2009. Programmatic Environmental Assessment of the Program for Decreasing or Eliminating Predation of Pre-weaned Hawaiian Monk Seal Pups by Galapagos Sharks in the NWHI. Pacific Islands Fisheries Science Center, Protected Species Division, Hawaiian Monk Seal Research Program.
- NMFS 2010. Supplemental Environmental Assessment of the Program for Decreasing or Eliminating Predation of Pre-weaned Hawaiian Monk Seal Pups by Galapagos Sharks in the Northwestern Hawaiian Islands. Pacific Islands Fisheries Science Center, Protected Species Division, Hawaiian Monk Seal Research Program.
- NMFS 2010. On May 7, 2010 the PIFSC re-initiated consultation under the ESA to include use of the surprise net to lethally remove sharks at FFS. The PIRO concurred that use of the surprise net, along with the harpoon, spear gun and handline fishing techniques to mitigate the high predation rate by Galapagos sharks on Hawaiian monk seals is Not Likely to Adversely Affect ESA-listed Hawaiian monk seals and green turtles or their designated critical habitat (Letter of concurrence dated June 9, 2010). This consultation expired in June 2015. Therefore, on April 16, 2015, NMFS Pacific Islands Fisheries Science Center (PIFSC) initiated an informal consultation pursuant to Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §1531 et seq.) to analyze the effects of proposed activities within the Monument on protected species and designated and proposed monk seal critical habitat. The PIRO concurred that the project is Not Likely to Adversely Affect ESA-listed Hawaiian monk seals, green sea turtles, hawksbill turtles, and is not likely to adversely affect designated or proposed critical habitat (Letter of concurrence dated April 30, 2015).
- The Department has made an exemption determination for this permit in accordance chapter 343, HRS, and Chapter 11-200, HAR. See Attachment ("DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAHA NAUMOKU AKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT PERMIT TO DR. FRANK PARRISH AND ANN GARRETT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE, FOR ACCESS TO STATE WATERS TO CONDUCT SHARK REMOVAL ACTIVITIES UNDER PERMIT PMNM-2016-008."

Has Applicant been granted a permit from the State in the past? Yes ☒ No ☐

If so, please summarize past permits:

- The applicant was granted permit PMNM-2007-053 in 2007 for unrelated work and permits PMNM-2010-014, PMNM-2011-007, PMNM-2012-013, PMNM-2013-017, PMNM-2014-023, and PMNM-2015-008 from 2010 to 2015 for similar work.
- George "Bud" Antonelis was granted permit PMNM-2007-025 in 2007 for activities similar to those being proposed by the current Applicants.



Have there been any a) violations: Yes ☐ No ☒  
b) Late/incomplete post-activity reports: Yes ☐ No ☒  
Are there any other relevant concerns from previous permits? Yes ☐ No ☒

#### STAFF OPINION

DAR staff is of the opinion that Applicants have properly demonstrated valid justifications for their application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with the following special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Conservation and Management Permit General Conditions, and include the special condition which addresses field reporting that the BLNR imposed in 2011 for this activity (See Recommendation section, #6.). All suggested special conditions have been vetted through the legal counsel of the Co-Trustee agencies (see Recommendation section).

#### MONUMENT MANAGEMENT BOARD OPINION

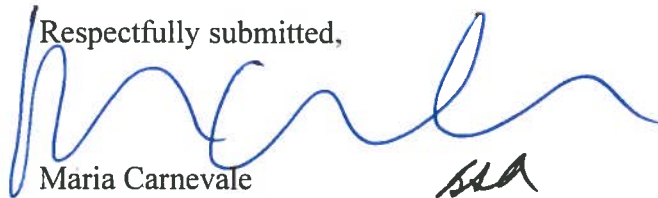
The MMB is of the opinion that the Applicant has met the findings of Presidential Proclamation 8031 and this activity may be conducted subject to completion of all compliance requirements. The MMB concurs with the special conditions recommended by DAR staff.

RECOMMENDATION:

That the Board authorize and approve a Conservation and Management Permit, to Dr. Frank Parrish and Ann Garrett, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, with the following special conditions:

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocols attached to this permit.
4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.
5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State NWHI Marine Refuge.
6. Permittee is required to provide in writing to the Monument Management Board (MMB), a field report after any lethal catch, to include species, size, and GPS coordinates of capture location within a week of capture date, unless unforeseen field communications inhibit this time frame to be met.
7. That the permittee provide, to the best extant possible, a summary of their Monument access, including, but not limited to, any initial findings to the DLNR for use at educational institutions and outreach events.

Respectfully submitted,



Maria Carnevale  
State Co-Manager

Papahānaumokuākea Marine National Monument

APPROVED FOR SUBMITTAL



SUZANNE CASE  
Chairperson

**Papahānaumokuākea Marine National Monument**  
CONSERVATION AND MANAGEMENT Permit Application

**NOTE:** *This Permit Application (and associated Instructions) are to propose activities to be conducted in the Papahānaumokuākea Marine National Monument. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Papahānaumokuākea Marine National Monument (Monument).*

**ADDITIONAL IMPORTANT INFORMATION:**

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.
- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.
- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

**INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED**

Send Permit Applications to:  
NOAA/Inouye Regional Center  
NOS/ONMS/PMNM/Attn: Permit Coordinator  
1845 Wasp Blvd, Building 176  
Honolulu, HI 96818  
nwhipermit@noaa.gov  
PHONE: (808) 725-5800 FAX: (808) 455-3093

**SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.**

## **Papahānaumokuākea Marine National Monument Permit Application Cover Sheet**

This Permit Application Cover Sheet is intended to provide summary information and status to the public on permit applications for activities proposed to be conducted in the Papahānaumokuākea Marine National Monument. While a permit application has been received, it has not been fully reviewed nor approved by the Monument Management Board to date. The Monument permit process also ensures that all environmental reviews are conducted prior to the issuance of a Monument permit.

### **Summary Information**

**Applicant Name:** Frank Parrish, PhD. and Ann Garrett

**Affiliation:** NOAA-NMFS-PIFSC/PIRO

**Permit Category:** Conservation and Management

**Proposed Activity Dates:** May 15, 2016 - May 14, 2017

**Proposed Method of Entry (Vessel/Plane):** NOAA RV Hi'ialakai or Sette

**Proposed Locations:** French Frigate Shoals

**Estimated number of individuals (including Applicant) to be covered under this permit:** 8

**Estimated number of days in the Monument:** 120

**Description of proposed activities:** (complete these sentences):

a.) The proposed activity would...  
potentially reduce Galapagos shark (G. shark) predation on suckling or recently weaned monk seal pups at French Frigate Shoals, thereby improving survival and making more pups available for translocation and other monk seal conservation efforts within the monument.

b.) To accomplish this activity we would ....  
remove G. sharks (tail length of 200cm or greater) caught within 700m of select pupping sites. Sharks would be caught by the following methods: 1) hand line, 2) hand-held harpoon, 3) drum-line, and/or 4) small 10-hook bottomset. For all methods, hooked sharks will be pulled into shore or alongside a small boat, tail-rope and killed with a bangstick. Shark carcasses will be examined (gross necropsy), sampled for future scientific analyses (isotope, fatty acid, genetic analysis) and any suitable shark tissue used as bait. Thereafter, remains would be returned to the ocean or handled as deemed appropriate by Native Hawaiian community members.

c.) This activity would help the Monument by ...  
conducting activities identified in the Papahānaumokuākea Marine National Monument Management Plan (December 2008, hereinafter referred to as MMP) Priority Management Needs: 3.2 Conserving Wildlife (Hawaiian monk seals), and 3.3 Reducing Threats (predation) to Monument Resources (Hawaiian monk seals), as well as the Co-

Trustee's Conservation & Management Activity: Natural Resource Protection, as listed in section 6.3 of that Monument permit application.

The Co-Trustees, including NOAA, aim to accomplish natural resource protection by conducting "...management actions to promote the conservation of Monument resources which includes activities necessary to carry out protection of species, such as carrying out existing recovery plans" to fulfill our obligations under the Endangered Species Act (MMP page 11). Removal of sharks as a means of managing the threat of shark predation will protect Hawaiian monk seal pups, increasing the chances these pups will grow to adults and reproduce. This is necessary to the species' recovery. Monitoring shark activity and removing sharks are both listed in the Hawaiian Monk Seal Recovery Plan (NMFS 2007) and endorsed by the Hawaiian Monk Seal Recovery Team as necessary activities, critical to the species' recovery.

**Other information or background:**

This is a broad summary of the pertinent facts related to this permit. Additional information can be found in supplemental information attached with this application.

- The Hawaiian monk seal is an endangered species numbering approx 1,100 individuals.
- In the PMNM, the key threats to the survival of the species are falling birth rates combined with poor survival of juvenile Hawaiian monk seals to reproductive age.
- The primary source of pup mortality at French Frigate Shoals (FFS; once home to the largest monk seal subpopulation) is the unique predatory behavior of a small number of G. sharks, which target nursing and newly weaned pups.
- Predation peaked in 1997-1999; it continues at a rate of 5-11 pups per year from 2000-2014 (usually 15-25% of the pup cohort each year).
- Between 1997 and 2014, shark predation affected approximately 250 pups out of roughly 1000 born at FFS. Sharks have killed many pups and others were permanently maimed by severe shark bites and subsequently died.
- Since 1997, NMFS has engaged in a variety of actions to address this threat, including pre-weaning and translocating pups, predator deterrents, and targeted fishing activities to remove problem G. sharks.
- Despite the suite of activities implemented by NMFS, the monk seal population in the NWHI, and particularly at FFS, has continued to decline.
- Pup predation by G. sharks therefore has an escalating impact on the remaining population.
- Removing the sharks exhibiting this behavior from the environment is the most effective means of preventing continued predation.
- NMFS has consulted numerous stakeholders including Native Hawaiians, animal welfare groups, conservation professionals, and the general public. Opinions and concerns are varied between individuals but no external group has requested NMFS cease this activity.

- This activity has been approved and undertaken safely and respectfully almost every year since 2010.
- Successful removal of these individuals could have a profound effect on the monk seal population at French Frigate Shoals while having negligible impact on the G. shark population.

## **Section A - Applicant Information**

### **1. Applicant**

Name (last, first, middle initial): Dr. Frank Parrish and Ann Garrett

Title: Chief of Protected Species Division, PIFSC, NMFS,  
Assistant Regional Administrator, Protected Resources Division, PIRO, NMFS

**1a. Intended field Principal Investigator (See instructions for more information):**  
Shawn Farry (Probable field camp leader for French Frigate Shoals)

### **2. Mailing address (street/P.O. box, city, state, country, zip):**

Protected Species Division  
NOAA IRC  
Pacific Islands Fisheries Science Center

[REDACTED]

Phone: [REDACTED]

Fax: [REDACTED]

Email: [REDACTED]

For students, major professor's name, telephone and email address:

**3. Affiliation (institution/agency/organization directly related to the proposed project):**  
NOAA-NMFS-PIFSC-PSD and NOAA-NMFS-PIRO-PRD

**4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):**

Charles Littnan, PhD, Lead Scientist, Hawaiian Monk Seal Research Program;  
Shawn Farry, JIMAR, FFS Field Camp Leader;  
Mark Sullivan, JIMAR, field biologist  
TBA (1-3 staff), JIMAR, field biologists





## Section B: Project Information

### 5a. Project location(s):

<input type="checkbox"/> Nihoa Island	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Necker Island (Mokumanamana)	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> French Frigate Shoals	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Gardner Pinnacles	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Maro Reef			
<input type="checkbox"/> Laysan Island	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Lisianski Island, Neva Shoal	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Pearl and Hermes Atoll	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Midway Atoll	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Kure Atoll	<input type="checkbox"/> Land-based	<input type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Other			

### Ocean Based

☒ Remaining ashore on any island or atoll (with the exception of Midway & Kure Atolls and Field Camp staff on other islands/atolls) between sunset and sunrise.

NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

### Location Description:

Camping and fishing activities will occur at Trig, Gin and Little Gin Islands  
 Fishing will occur at Round Island.

### 5b. Check all applicable regulated activities proposed to be conducted in the Monument:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- ☒ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
- ☒ Anchoring a vessel
- ☐ Deserting a vessel aground, at anchor, or adrift
- ☒ Discharging or depositing any material or matter into the Monument
- ☐ Touching coral, living or dead
- ☒ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
- ☒ Attracting any living Monument resource
- ☐ Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
- ☐ Subsistence fishing (State waters only)
- ☐ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

**6. Purpose/Need/Scope *State purpose of proposed activities:***

**Purpose:**

The purpose of the proposed activity is to support the recovery of the Monument's endangered Hawaiian monk seals by reducing the likelihood of shark predation on seal pups at French Frigate Shoals. This activity, when combined with other conservation efforts (translocations, captive care, etc.), would help address the problem of low juvenile seal survival, a factor identified as one of the main causes of Hawaiian monk seal population decline in the Monument.

**Need:**

The Hawaiian monk seal is in crisis with only approximately 1,100 seals remaining in Hawaii. Numerous threats afflict the species across its range. Shark predation on pre-weaned and newly weaned pups contributes to a unique and extreme situation at FFS that peaked in 1997-1999 and stands out from the trends observed at other sites in the NWHI. Galapagos sharks (G. sharks from this point forward; *Carcharhinus galapagensis*) have been identified as the primary predators for these young seals attacking pups while they swim in shallow water or rest on shore. This predation by Galapagos sharks was not observed prior to the mid 1990's and only occurs at French Frigate Shoals. Since 1999, predation has declined to 5-11 pups a year, but with simultaneously declining birth rates this predation accounts for about 25% of FFS seal pup mortality every year.

It is important to emphasize the impact of this predation on the monk seal population at French Frigate Shoals. Since 1997, approximately 250 of just over 1000 pups born have been killed or maimed by Galapagos shark attacks. Often, injuries that are sustained, but not immediately lethal, impair and ultimately reduce the survival of the pup during a particularly challenging lifehistory stage. These estimates should be considered a conservative minimum.

The need for activities to reduce shark predation on monk seal pups at French Frigate Shoals is called for by the Recovery Plan for Hawaiian Monk Seals (NMFS, 2007) and the Monument's own guiding document, the Papahānaumokuākea Marine National Monument Management Plan (see TES-1.6; PMNM, 2008). Mitigation activities by HMSRP conducted over the last decade include harassment of sharks, intensive observation, translocation of weaned pups, deployment of devices to deter predation and shark removal. Currently, shark removal is the only strategy available that will substantially reduce and, potentially, permanently eliminate this threat.

**Scope:**

Based on the best available science from 18 years of observation and research the HMSRP, in collaboration with external scientists, has developed premises about the identity and number of sharks likely involved with pup predation. Based on shark sightings by HMSRP staff and research conducted by Meyer et. al, it is believed that the number of sharks participating in this predatory behavior "is in the 10's" (Meyer's pers

comm.). It was recommended from ecosystem modeling and the shark predation workshop (Gobush et al. 2010) to remove up to a total of 20 sharks (3 have been removed and 17 remain) to reduce this threat to monk seals while minimizing impacts to the shark population. We have also designed this project to try to target these predatory sharks specifically. Based on research and assessment by shark experts that participated in NMFS' shark predation workshops is asserted that G. sharks found in shallow waters (less than 25 feet) far inside the FFS atoll (near islands where predation occurs) have a high likelihood of participating in this predatory behavior. This is because these shallow areas are atypical habitats for G. sharks to frequent. Thus, by concentrating our efforts in waters 25 feet or shallower within 700 meters of islands where this predation occurs, we will be concentrating our efforts towards this smaller 'atypical' part of the population and reducing the risk to non-target G. sharks.

\*Considering the purpose of the proposed activities, do you intend to film / photograph federally protected species? Yes ☒ No ☐

For a list of terrestrial species protected under the Endangered Species Act visit:

<http://www.fws.gov/ endangered/>

For a list of marine species protected under the Endangered Species Act visit:

<http://www.nmfs.noaa.gov/pr/species/esa/>

For information about species protected under the Marine Mammal Protection Act visit:

<http://www.nmfs.noaa.gov/pr/laws/mmpa/>

**7. Answer the Findings below by providing information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Monument:**

The Findings are as follows:

a. How can the activity be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument?

The activity has been and will be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument.

There has been extensive consultation with the Native Hawaiian community on this and many other Hawaiian monk seal research and conservation efforts since initiating this series of predation mitigation strategies in 2010. In 2010 -2011, we consulted with and received quality input from OHA and the Monument's Native Hawaiian Cultural Working Group (NHCWG). The feedback from the NHCWG and others was not homogenous with a diverse array of perspectives and opinions both supporting and opposing the activity. The NHCWG determined it was unable to offer an endorsement or censure of the proposed management activity and has not reviewed the activity since. We are looking forward to providing any information to the NHCWG at their request in the future.

Discussions with other members of the Hawaiian community have resulted in constructive feedback and improved understanding of the views of some representatives of the Native Hawaiian community on our proposed work. From these meetings, we also supported the participation of a number of Native Hawaiians in our shark predation mitigation work in 2010 and 2011.

In 2013 with the addition of seal flesh as bait, we were encouraged by the State of Hawaii Board of Land and Natural Resources to communicate with, and be responsive to, stakeholders regarding this activity. We alerted approximately 35 organizations and individuals about our field activities during the 2013 field season (including shark fishing) and updated them on our plans for the 2014 season. To date, none of these entities has expressed questions or concerns.

We also undertook consultations regarding the use of tissue from previously deceased monk seals as bait with several Native Hawaiians with whom we have been working with on other monk seal issues. In this regard, we have held one-on-one discussions with several individuals (cultural practitioners, partners, and/or advisors). Input we received during these one-on-one discussions ranged from full support and understanding to acceptance without expressed support. No one we have spoken with regarding the use of seal tissue has voiced opposition or indicated that the use of seal tissue as we have proposed would adversely affect their productive relationships with our program or otherwise diminish their support for monk seal conservation. The overarching sentiment we have heard has been that as long as the seals would be dead of a cause beyond our control (which would be the case), using their bodies to try to save a still living seal, while admittedly difficult to consider or undertake, would be a reasonable effort in light of the endangered status of the monk seal population.

Historic resources under the NHPA would not be affected or potentially affected by our proposed actions.

To safeguard the ecological integrity of the Monument, we propose to limit the scope of our removal actions as described above and also to avoid by-catch of any other wildlife to the greatest degree possible. Possible adverse effects on the coral reef ecosystem at FFS from shark removals were investigated using the EcoSim model (Parrish, unpublished data). Results from that work indicated that the removal of 20 sharks had a nearly imperceptible effect on the dynamics of the FFS ecosystem. Expert opinion at our shark predation workshops supported these modeled results.

b. How will the activity be conducted in a manner compatible with the management direction of this proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument cultural, natural and historic resources, qualities, and ecological integrity, any indirect, secondary, or cumulative effects of the activity, and the duration of such effects?

The proposed activity would be conducted in a manner that will not only be compatible with the management direction of the Monument, but will enhance the ecological integrity of the Monument by helping to avoid the extinction of an endangered species. This activity will be conducted on a very small spatial and temporal scale and while it will directly adversely affect up to 17 G. sharks (but not the overall G. shark population) it could likely have a long-term beneficial cumulative impact on the health of the monk seal population and biodiversity of the Monument.

The extinction of the Hawaiian monk seal at FFS would adversely affect the Monument's biodiversity and trophic structuring at this location. A failure to mitigate the significant threat of shark predation may advance the potential for extinction and prevent recovery. Other methods executed in an attempt to reduce this predation threat have failed; it is believed that the activities proposed here will reduce the threat.

c. Is there a practicable alternative to conducting the activity within the Monument? If not, explain why your activities must be conducted in the Monument.

There is not a practicable alternative location to the proposed activity outside of the Monument because this threat to the recovery of the endangered Hawaiian monk seal has only been identified in the Monument. While a small portion of the monk seal population lives outside of the Monument, in the MHI, the species will not likely avoid extinction without a healthy population in the NWHI. Recovery requires at least 2900 seals in the NWHI with at least 5 of the 6 main sub-population above 100 individuals and increasing. To accomplish this at FFS shark predation must be mitigated.

Losing a high number of pre-weaned and newly weaned pups to shark predation is a unique phenomenon at French Frigate Shoals only; therefore, we propose to manage this threat at this location only. We have taken this focused and targeted approach to maximize the limited federal resources and minimize adverse impacts to other Monument resources by conducting the shark removal activities at 4 of the 9 islets at FFS.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?

The potential positive outcomes from enhanced monk seal recovery outweigh the likely negligible adverse impacts associated with the loss of up to 20 G. sharks (17 requested here and 3 previously removed) because we believe that these actions will ensure the co-existence atoll-wide of the two species into the future.

If predation is not mitigated, the monk seal population may decline to a level that is unable to overcome demographic or environmental stochasticity. If a total of 20 G. sharks are removed, a higher number of pups should be expected to survive

to be candidates for translocation and other enhancement activities and/or survive on their own to adulthood than would be the case if predation were not mitigated.

Increasing the number of juvenile seals reaching adulthood augments the population numbers in the short-term and, if they are female, its reproductive potential in the long run.

Neither the HMSRP nor external experts believe that other, secondary, impacts are likely to result from the removal because G. sharks and other apex predators are relatively abundant compared to monk seals (see discussion above on abundance).

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.

The activity is scheduled to coincide with the primary pupping season when seals are at their greatest risk of predation.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

Some of the staff that conducted this work in multiple previous field seasons will return for the 2016 field season. Since 2010, field staff have completed this work at FFS safely with no harm to seals or lethal shark bycatch (i.e. all tiger, whitetip and grey reef sharks captured were released alive). All new staff receive briefing and trainings in Honolulu and FFS before they participate in fishing activities.

Also, the HMSRP conducts a Risk Assessment on shark fishing every year with FFS staff contributing and participating in updating this assessment. This will be done in 2016 as well.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct. This is an activity proposed by the Federal Government.

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.

The proposed removal methods and gear were all approved multiple times previously for past permit applications (all fishing methods 2010-2015, seal flesh as bait 2013-2015).

The proposed procedures (i.e. scope, timing, location, numbers, species of sharks to be removed) are appropriate to reach a goal of conserving wildlife (Hawaiian monk seals) and reducing the threat (shark predation) on a Monument resource (Hawaiian monk



seals) based on the best-available knowledge about shark abundance, shark movement, shark predation, predation mitigation, seal behavior, seal movement, fishing catch rates and fishing success rates (given location) at FFS. Please see Gobush (2010) for a comprehensive description of this knowledge. Adverse impacts to Monument cultural, natural, historic resources and ecological integrity are minimized as described in the discussion above.

Based on the experiences and success of past field teams at FFS, shark ecologists and fishing gear-makers, having a variety of fishing methods at our disposal is advisable. The field team will not know ahead of time which method will work best. Based on hundreds of hours of observation G. sharks come into the wavewash and attack pups at varying times of day and of the season, in varying numbers and at varying frequencies. These sharks also appear to respond to human activity in various ways (i.e. wary versus not wary). The team needs to be able to respond to the situation and the unpredictable and individualistic nature of sharks if they are going to have a chance at being successful.

i. Has your vessel been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?

Yes

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.

There are no other factors that would make the issuance of a permit for the activity inappropriate. This Conservation & Management permit renewal application is a replication of the permitted activities in 2010-2015. Multiple permit applications evolved from previous projects, which underwent extensive review in-house, by members of the Hawaiian Monk Seal Recovery Team, the USFWS, and the State of Hawaii have been previously approved. The purpose, scope, methods and protocol of this application mirror and/or build upon the activities, insights and experiences of these previous projects.

#### **8. Procedures/Methods:**

##### **Shark Fishing/Removals**

1. Fishing personnel and location:

A team of 3-5 staff experienced and trained in safe and effective methods for shark fishing/removal will be tasked with monitoring and removal of G. sharks that they encounter within 700m of shore of Trig, Gin, Little Gin and Round islets. As such, capturing sharks will only occur in what is considered the shallow lagoon inside the atoll in close proximity to islets with the highest rate of shark predation. Handlines and harpoon will be used in shallow water, from shore or close to shore; bottomsets and drumlines will be used in deeper water, over sandy substrate at distances farther from shore (up to 700m away). Ability to set the gear as far out as 700m from shore will help

ensure that it performs as designed by Meyer in 2009. Shallow depth, coral and snags make setting the bottomset at closer distances a challenge.

## 2. Fishing Methods:

Four different methods will serve as a “toolbox” of options to safely remove a maximum of 17 Galapagos sharks: handline, harpoon, bottomset, and drumline. Each method has its advantages and drawbacks. The potential for shark wariness to humans in combination with extremely low CPUE near pupping sites indicates that such a “toolbox” is needed to successfully capture sharks at the numbers and in the areas we desire.

Handlines and harpoons have the advantage of being very specific. Handlines were successful in the past.

Bottomsets and drumlines are, by design, restricted by habitat characteristics, otherwise lines can get tangled, etc. Thus, bottomsets and drumlines are not recommended to be effective in very shallow depths. Bathymetry and currents are islet-sector specific; therefore, the distance from shore to achieve a feasible depth (approx. 25 feet) and appropriate substrate (sandy bottom) is also islet-sector specific; a zone of 700m around each islet will provide for this.

No one method is guaranteed to be successful given the unpredictability and individualistic nature of sharks. However, together, all the methods provide the greatest chance of success. The order in which the different methods will be applied will be at the discretion of the team and will be highly dependent on a variety of environmental and biological factors. If we employ more than one method at a time, we still expect that the total number of removals will be low based on the low CPUE in the shallow lagoon.

We will monitor the total number of baited hooks deployed across methods in order to remain within the proposed catch quota of 17 additional sharks. We will use the same bait type (large tuna heads, shark remains and tissue from previously deceased seals) and hook type (circle hook, size 18/0 to 20/0) as previously approved. Fish and seal tissue bait will be brought from outside the Monument. There may not be the opportunity to collect tissue from a deceased seal at French Frigate Shoals. Seal tissue and shark tissue bait will also be collected within the Monument as available.

We will tend the gear to avoid bycatch mortality (non-target species will be dehooked and released). It is assumed that bycatch will be minimal and primarily shark species, based on Meyer’s crew’s experience in 2009 and our bycatch in 2010-2015. Fishing staff will avoid lethal removal of non-target sharks through their proper identification. The only shark species that is likely to be confused with the G. shark is the grey reef shark. However, in G. sharks, there is a very distinct ridge along the back between the first and second dorsal fins. Also, the maximum size of 20 grey reef sharks caught across the

NWHI was 159 cm (total length) in a 2003 study and in 2011 at Trig and Gin by our staff (3 5-foot grey reefs were caught and released). So, based on the absence of the dorsal ridge and a threshold size requirement above 200cm for removal, we will ensure that we do not misidentify and cull a shark that is actually a grey reef.

For handlines, a line will be baited from shore or small boat. A hand-held harpoon will be used from shore or small boat when a shark is observed. A barbed shaft, on the end of the harpoon pole will be delivered by hand and the tip will be attached to wire cable and connecting line that will be used to retrieve the shark. For these methods, captured sharks will be hauled out on to the beach for euthanasia.

Bottomsets will be made to the specifications identical to those used in the Meyer's project permitted in the Monument to catch sharks in 2009. Meyer's bottomsets had 10 hooks; we propose to use this many or less on each set. The gear is designed for sandy substrate with no potential for snagging. Approximately 200- 350m long ½ inch polypropylene mainline with overhand loops at regular intervals (40-60m) for gangion (branch line with hook) attachment will be used. Each end of the mainline will have a buoy line consisting of 1/2-inch polypropylene with a cleat at the top and a Danforth anchor (9-12 lb) at the bottom. The buoy line length will be contingent on target set depth (45-75 feet depending on depth of deployment allowed). Gangions will consist of a stainless steel lobster trap clip (snaps onto mainline loops) with 2m of 1/2 inch polypropylene, a large swivel, 2m of 7/19 strand stainless steel aircraft cable (bite leader) to a 20/0 Mustad circle hook. Sets will be made from a small boat, and with short soak times of a maximum of 3 hours (in the daytime only).

The drumline will be of either of the following 2 designs. It may consist of a large buoy, with a chain trace attached to it and single baited hook, shackled to the other end of the chain trace. A baited hook will be suspended approximately 10 feet above the sea floor. A groundline will be shackled to the drum with a swivel, attached to a Danforth or CQR anchor and anchored to the bottom substrate. A scope of 3-4 times the water depth will be used. Alternatively, it may consist of 20ft of ½ in. polypropylene substituting for a chain trace, connected to the same branchline type used for the bottomsets described above. The opposite end of this mainline will be shackled to a float-line buoy that serves as the 'drum'. A chain will be run through this buoy with the other end shackled to an 8' yellow marker line. The other end of the yellow line will then be shackled to a large red buoy with the connected float line (same used for bottomsets). The drumline set-up is a modification of what was used in 2010 so that the single baited hook rests on the bottom and does not suspend in the water column. This is preferred because we are targeting a species that spends most of its time on the bottom feeding on demersal fishes. With this design, the drum-buoy functions as a 'bobber' that will sink or move when an animal is hooked.

### 3. Post-catch procedures:

When a shark is hooked or harpooned it will be brought to shore or to the side of the small boat and tail-roped and euthanized with a .44 caliber bang stick. HMSRP has established bangstick training and safety protocols and conduct an annual Operational Risk Management (ORM) for shark fishing operations. ORM is a continual process which includes risk assessment, risk decision making, and implementation of risk controls, which results in acceptance, mitigation, or avoidance of risk. It is standard for HMSRP to conduct ORM and risk assessment for projects that may involve risks such as this shark predation mitigation work.

Refresher training on use of the bang stick will occur boat side on inert material here in Oahu.

HMSRP will perform a necropsy on captured G. sharks on site, including gut content inspection, morphometric measurements, and identification of sex and reproductive state. Procedures will mirror those done on monk seals, using the same kits, modified as necessary based on instructions in the Elasmobranch Husbandry Manual (editors M. Smith, D. Warmolts, D. Toney & R. Hueter). The main focus of shark necropsies will be to determine pregnancy and gut contents, provide remains for Native Hawaiian cultural practices (if requested, they have not been for the last several permit cycles), and take samples for scientific analysis.

Samples of muscle, liver, vertebrae for fatty acid and isotope/ diet analysis will be removed from the carcass after the necropsy and stored frozen. Vertebrae samples will likely be sent to Woods Hole Oceanographic Institute to be processed by Greg Skomal's lab for isotope analysis. Fatty acid profiles will likely be analyzed for data on prey recently consumed, likely Sara Iverson's laboratory at Dalhousie University. Stomach contents will be screened for monk seal remains and provided to shark ecologists upon request. Some remaining tissue will possibly be retained for bait.

Thereafter, shark remains will be handled as deemed appropriate by cultural advisors and the State of Hawaii Office of Hawaiian Affairs. In recent years, shark remains have been returned to the ocean outside of the fringing reef.

#### 4. Reporting:

The MMB will be notified by NMFS when a shark has been removed. This will be done as quickly as possible and should normally be within 24 hours. A report that summarizes data concerning the removal of each shark will be submitted to the Monument in compliance with the Monument reporting schedules.

## 5. Evaluation:

The ultimate goal of the proposed conservation and management activity is to reduce the threat of shark predation to pre-weaned and newly weaned monk seal pups at FFS. The proximate goals are to monitor shark activity and remove up to 17 additional G. sharks within 700m of shore of Trig, Round, Gin and Little Gin islets. We will consider the activity to be completed if the proximate goals are achieved in 2016 and the achievement of the ultimate goal is apparent within 1- 2 years thereafter. We expect a lag time in any measurable increase in pup survivorship from shark removal because it is likely to take at least an entire season, but in reality several seasons, to catch the number of sharks requested given the low CPUE in the shallow lagoon.

If the number of sharks removed in 2016 approximates 17, and no improvement in the proportion of pre-weaned and newly weaned pups lost to sharks (confirmed and inferred mortalities) is detectable within 1-2 years, then the idea of any additional shark removals will require careful consideration. If shark removal does not approximate 17 individuals then it is unlikely that we will see a substantial decrease in shark predation and improvement in survivorship of young seals and future requests for the activity will continue. If predation ceases, then future requests for this activity are unlikely.

One metric that is not used as an evaluation of this project is our catch per unit effort (CPUE). The design of this project is very selective. It is targeting a small number of sharks (17) that are generally wary of humans and display a behavior that varies across time. All fishing efforts are in areas where these sharks rarely occur. This is to avoid catching sharks that aren't participating in monk seal pup predation. Therefore, by design our CPUE will be extremely low and it is expected that hundreds of hours of effort are required to catch a shark. This means completion of this management activity will take time and will continue across several years.

Additional descriptions of:

Anchoring a vessel: small boats will be anchored at FFS according to standard practices included in the monk seal field camp permitted activities. This includes anchoring only in sandy substrate and taking steps to avoid damaging of hard substrates (especially coral) with the anchor or chain.

Discharge: If it is requested that any remaining shark tissue be disposed of in the Monument, we suggest that remains be disposed at multiple deepwater locations outside of the atoll (latitude/longitude of the location will be recorded and avoided for addition disposals in the same year). We suggest a distance of 0.5 mile from the FFS atoll's breaking reef because disposal can occur safely at this distance from the atoll and current and water depths are adequate.

**NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding.**

**9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):**

Common name:  
Galapagos shark

Scientific name:  
Carcharhinus galapagensis

# & size of specimens:  
17 adult

Collection location:  
French Frigate Shoals, inside the atoll, near pupping sites of Gin, Little Gin, Round and Trig Islands

☒ Whole Organism ☐ Partial Organism

**9b. What will be done with the specimens after the project has ended?**

A necropsy will be conducted, samples retained, some tissue will be used for bait, remains will be returned to the ocean or handled as deemed appropriate by members of the Native Hawaiian community and OHA.

Collected samples will be stored appropriately at the NOAA Inouye Region Center until samples are sent to :

Woods Hole Oceanographic Institute/ diet analysis through isotope screening (vertebrae) (Greg Skomal)

Dalhousie University/ diet analysis through fatty acid profiles (liver) (Sarah Iverson)

NOAA toxicologist (NOS Lab)/ Ciguatera and mercury level testing (muscle and liver)

NMFS geneticist/ genotyping (DNA from fin clip) (American Museum of Natural History or Hawaii Institute of Marine Biology if requested)

NMFS geneticist/ prey identification (DNA from stomach contents, if available) (American Museum of Natural History).

Samples will not be sent to the scientists listed above until additional sharks (optimally approaching 15-20 individuals) have been captured. To date, we have these set of samples from 3 Galapagos sharks (1 each year in 2010, 2011, 2015).

**9c. Will the organisms be kept alive after collection?** ☐ Yes ☒ No

- General site/location for collections:
- Is it an open or closed system? ☐ Open ☐ Closed
- Is there an outfall? ☐ Yes ☐ No
- Will these organisms be housed with other organisms? If so, what are the other organisms?
- Will organisms be released?

**10. If applicable, how will the collected samples or specimens be transported out of the Monument?**

Biological samples collected from G. sharks will be stored as appropriate (i.e. in vials with dmsol, in liquid nitrogen, dry etc.). All samples will be transported out of the Monument aboard a NOAA research vessel.

**11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:**

Shark necropsy and sample analysis will be provided to HIMB and other shark ecologists as requested.

**12. List all specialized gear and materials to be used in this activity:**

Polypropylene mainline, buoy lines, gangions, bite leaders, lobstertrap clips, swivels, gaffs, meter caliper, leads, gloves, crimpers, cutters, hooks, knives, bolt cutter, buoys with anchor rode and anchor, chain traces, danforth anchors, SS wire, 3/0 interlock snap swivel, mustad circle hooks (18/0 - 20/0), bangstick, ammunition (44 magnum cartridges Remington), hand-held harpoon, bait cooler, bait (large tuna heads, seal tissue, shark tissue), camping gear, night-vision scope. Bottomsets will be made by Pacific Ocean Producers to be identical to that used in the Meyer's project only adjusted for minimum of 5 hooks and up to 10 hooks (Meyer used ten hooks), and the possibility of an increased interval of 60m between branchlines, which would result in an increased groundline length of approximately 350m. A bottomset with a wider reach may prove beneficial in catching Galapagos sharks.

**13. List all Hazardous Materials you propose to take to and use within the Monument:**

As listed on the Manager's permit: chemicals related to necropsy and tissue preservation (formalin, DMSO and/or ethyl alcohol for genetics and fatty acid analysis), also bangstick ammunition (.44 caliber magnum cartridges).



15 ml vials with 20% DMSO, count 20  
10% buffered formalin, 500ml  
ethanol, 0.5 gallons  
bangstick ammunition (.44 caliber magnum cartridges), 2 boxes of 20 cartridges  
Propane for freezers (tanks 60#), 28  
Propane for camp stove (canisters 2#), 10  
Non-ethanol gasoline (drums, 55 gallon), 6

**14. Describe any fixed installations and instrumentation proposed to be set in the Monument:**

No fixed instrumentation.

Three to four freezers will be required at Tern for bait and sample storage. These will be either propane or solar and removed at the end of the season.

**15. Provide a time line for sample analysis, data analysis, write-up and publication of information:**

Initial report to the Monument: October 31, 2016

Annual Report December 31, 2016

Final Report in 2017

Necropsies focused on the gross anatomy immediately upon death

Preliminary gut content analysis- immediately upon death

Fatty acid, genetic (including genetic analysis of gut contents) and vertebrae analysis:

TBD- will be sent out for analysis

**16. List all Applicant's publications directly related to the proposed project:**

This list includes all publications relevant to this conservation issue:

Dale, J. J., A. M. Stankus, M. S. Burns, and C. G. Meyer. 2011. The Shark assemblage at French Frigate Shoals Atoll, Hawai'i: species composition, abundance and habitat use. Plos One 6:e16962.

Gobush, K.S. 2010. Shark predation on Hawaiian monk seals: Workshop II & post-workshop developments, November 5-6, 2008. U.S. Dep. Commer., NOAA Tech. Memo., NOAA-TM-NMFS-PIFSC-21, 43 p. + Appendices.

Gobush, K.S. and S.C. Farry. 2012. Nonlethal efforts to deter shark predation of Hawaiian monk seal pups. Aquatic Conservation. DOI:10.1002/aqc.2272.

Harting, A., G. Antonelis, B. Becker, S.M. Canja, D. Luers, and A. Dietrich. In Prep. Galapagos Sharks and Hawaiian Monk Seals: A Conservation Conundrum. Marine Mammal Science.

Hawn, D. 2000. Galapagos shark (*Carcharhinus galapagensis*) removal and shark sighting observations at Trig Island, French Frigate Shoals during the 2000 Hawaiian monk seal field season. Prepared for National Marine Fisheries Service, Southwest Fisheries Science Center, Honolulu Laboratory. Contract Order 40JJNF000208. 25 pp.

Hayes, S. 2002. Galapagos shark predation of monk seal pups at Trig Island, FFS 2001. Unpublished report. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 22 pp.

NMFS, 2002. Environmental assessment for the proposed experimental shark removal to enhance preweaned monk seal pup survival at Trig Island, French Frigate Shoals, Hawaiian Islands National Wildlife Refuge. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 46 pp.

NMFS. 2003. Shark predation at Trig Island, 2002. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 38 pp.

NMFS 2004. Shark predation at French Frigate Shoals, 2003. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 56 pp.


NMFS 2005. Shark Predation at French Frigate Shoals, 2004. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 36 pp.

NMFS. 2007. Recovery plan for the Hawaiian monk seal (*Monachus schauinslandi*) 165 p. U.S. Department of Commerce, National Oceanic and Atmospheric Agency, Silver Spring, Maryland.

NMFS. 2009. Programmatic environmental assessment of the program for decreasing or eliminating predation of pre-weaned Hawaiian monk seal pups by Galapagos sharks

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct. I agree that the Co-Trustees may post this application in its entirety on the Internet. I understand that the Co-Trustees will consider deleting all information that I have identified as "confidential" prior to posting the application.

 1-14-16  
Signature Date

 1-14-16  
Signature Date

**SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE BELOW:**

NOAA/Inouye Regional Center  
NOS/ONMS/PMNM/Attn: Permit Coordinator  
1845 Wasp Blvd, Building 176  
Honolulu, HI 96818  
FAX: (808) 455-3093

**DID YOU INCLUDE THESE?**

- ☐ Applicant CV/Resume/Biography
- ☐ Intended field Principal Investigator CV/Resume/Biography
- ☐ Electronic and Hard Copy of Application with Signature
- ☐ Statement of information you wish to be kept confidential
- ☐ Material Safety Data Sheets for Hazardous Materials

## **Papahānaumokuākea Marine National Monument Compliance Information Sheet**

- 1. Updated list of personnel to be covered by permit. List all personnel names and their roles here (e.g. John Doe, Diver; Jane Doe, Field Technician, Jerry Doe, Medical Assistant):**

Sadie Youngstrom, Field Camp Leader  
Mark Sullivan, Field Research  
Ross Nichols, Camp Assistant  
Genevieve Hilliard, Volunteer Assistant

- 2. Specific Site Location(s): (Attach copies of specific collection locations):**

French Frigate Shoals is an approximately 27 km-long crescent-shaped atoll that protects a 727 sq.-km shallow lagoon that is from 2 to 10 km wide. Numerous sand islets dot the lagoon area of French Frigate Shoals. Waves and currents constantly change the size and shape of these sandy islets. The majority of shark predation on nursing and weaned monk seal pups has occurred at Trig Island and therefore near shore waters around this island would be the primary implementaion site. However, dependent upon Galapagos shark activity, additional sites including Gin Island and Little Gin Island may be selected for proposed activities. Round island is variable in presence and location.

Trig Island – 1.1 acres in September 2004

Lat: 23 degrees 52' 17.59

Long: 166 degrees 14' 34.17

Gin Island – 2.1 acres in September 2004

Lat: 23 degrees 44' 03.88

Long: 166 degrees 09' 56.40

Little Gin Island - 2.3 acres in September 2004

Lat: 23 degrees 43' 43.64

Long: 166 degrees 09' 49.63

**2. Other permits (list and attach documentation of all other related Federal or State permits):**

Number	Issuing Agency	Type of Permit	Issue Date	Expire Date	Activity
16632	NMFS	Scientific Research and Enhancement	6/16/2014	6/30/2019	All Research by PIFSC on Hawaiian monk seals
PMNM-2016-001	Monument	Management	1/1/2016	12/31/2016	All Research and Conservation by PIFSC on Hawaiian monk seals in Monument
PMNM-2015-009	Monument	Conservation and Management	6/01/2015	5/31/2016	Shark fishing & tagging (will be replaced with new permit)

**3a. For each of the permits listed, identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation.** No violations

**4. Funding sources (Attach copies of your budget, specific to proposed activities under this permit and include funding sources. See instructions for more information):** Federal Government

**5. Time frame:**

Activity start: Cruise Departure 17 April 2016

Activity completion: Cruise Return 25 August 2016

Dates actively inside the Monument:

From: 19 April 2016

To: 23 August 2016

Describe any limiting factors in declaring specific dates of the proposed activity at the time of application: These are based on current cruise schedules. Times may change based on ship issues, weather, or other factors outside our control.

Personnel schedule in the Monument:

For this permit staff will be at FFS from approximately April 20 to August 21, 2016.

**6. Indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument:**

Federal Government

**7. Check the appropriate box to indicate how personnel will enter the Monument:**

- ☒ Vessel  
☐ Aircraft

Provide Vessel and Aircraft information: NOAA RV Hi'ialakai (deployment)  
NOAA RV Oscar Elton Sette (recovery)

**8. The certifications/inspections (below) must be completed prior to departure for vessels (and associated tenders) entering the Monument. Fill in scheduled date (attach documentation):** This will be provided in other permits for ships.

- ☐ Rodent free, Date:  
☐ Tender vessel, Date:  
☐ Ballast water, Date:  
☐ Gear/equipment, Date:  
☐ Hull inspection, Date:

**9. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):**

Vessel name:

Vessel owner:

Captain's name:

IMO#:

Vessel ID#:

Flag:

Vessel type:

Call sign:

Embarkation port:

Last port vessel will have been at prior to this embarkation:

Length:

Gross tonnage:

Total ballast water capacity volume (m3):  
Total number of ballast water tanks on ship:  
Total fuel capacity:  
Total number of fuel tanks on ship:  
Marine Sanitation Device:  
Type:

Explain in detail how you will comply with the regulations regarding discharge in the Monument. Describe in detail. If applicable, attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Provide the name and contact information of the contractor responsible for installing the VMS system. Also describe VMS unit name and type:

VMS Email:  
Inmarsat ID#:

\* Individuals MUST ENSURE that a type-approved VMS unit is installed and that its automatic position reports are being properly received by the NOAA OLE system prior to the issuance of a permit. To make sure your VMS is properly configured for the NOAA OLE system, please contact NOAA OLE at (808) 203-2503 or (808) 203-2500.

\* PERMITS WILL NOT BE ISSUED TO INDIVIDUALS ENTERING THE MONUMENT VIA VESSEL UNTIL NOAA OLE HAS CONTACTED THE MONUMENT PERMIT COORDINATOR WITH A 'POSITIVE CHECK' READING.

#### **10. Tender information:**

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? List the number of tenders/skiffs aboard and specific types of motors:  
"Montauk" 17' Boston Whaler with a 75hp Honda outboard engine.  
"Alert" 17' Boston Whaler with a 60hp Yamaha outboard engine

### **Additional Information for Land Based Operations**

#### **11. Proposed movement of personnel, gear, materials, and, if applicable, samples:**



Movement within the monument will be accomplished using tenders of the Hawaiian Monk Seal Research Program, which will be transported to FFS aboard the R/V *O.E. Sette* at the start of this activity. Atoll quarantine protocols will be observed.

**12. Room and board requirements on island:** NMFS/PSD personnel will establish a tent base camp at Tern Island, and will also have temporary camps at Trig Island to monitor and/or remove sharks. HMSRP will work with USFWS on warehouse access for field season use as in previous years.

**13. Work space needs:** Sufficient footprint on Tern Island to park two 20' whalers, on trailers. Space for 3 each chest freezers.

**DID YOU INCLUDE THESE?**

- ☐ Map(s) or GPS point(s) of Project Location(s), if applicable
- ☐ Funding Proposal(s)
- ☐ Funding and Award Documentation, if already received
- ☐ Documentation of Insurance, if already received
- ☐ Documentation of Inspections
- ☐ Documentation of all required Federal and State Permits or applications for permits



DAVID Y. IGE  
GOVERNOR OF HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

SUZANNE D. CASE  
INTERIM CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA  
FIRST DEPUTY

JEFFREY PEARSON  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

April 8, 2016

TO: Division of Aquatic Resources File

THROUGH: Suzanne Case, Chairperson

FROM: Maria Carnevale  
Papahānaumokuākea Marine National Monument

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT  
UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR  
PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT  
PERMIT TO DR. FRANK PARRISH AND ANN GARRETT, NATIONAL OCEANIC AND ATMOSPHERIC  
ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE, FOR ACCESS TO STATE WATERS TO  
CONDUCT SHARK REMOVAL ACTIVITIES UNDER PERMIT PMNM-2016-008.

The following permitted activities are found to be exempted from preparation of an  
environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR:

Project Title:

Papahānaumokuākea Marine National Monument Conservation and Management Permit to Dr.  
Frank Parrish, Chief of Protected Species Division, and Ann Garrett, Assistant Regional  
Administrator for Protected Resources, National Oceanic and Atmospheric Administration,  
National Marine Fisheries Service, for Access to State Waters to Conduct Shark Removal  
Activities.

Permit Number: PMNM-2016-008

Project Description:

The conservation and management permit, as described below, would allow entry and activities  
to occur in Papahānaumokuākea Marine National Monument including the NWHI State waters  
from June 1, 2016 through May 31, 2017.

This is an effort to conduct management activities for the conservation of Hawaiian monk seals,  
including the removal of predatory sharks from these areas. The activities would support the  
recovery of the endangered Hawaiian monk seal by reducing the likelihood of shark predation on  
seal pups at French Frigate Shoals.

ITEM F-4c

Three to four trained staff would remove seventeen (17) Galapagos sharks (tail length of 200 cm or greater) caught within 700 m of select pupping sites at French Frigate Shoals. Sharks would be caught by: (1) hand line, (2) hand-held harpoon, (3) drum-line, and/or (4) small 10-hook bottomset.

Bait for proposed fishing activities would include large tuna heads (brought from outside the Monument), shark remains (from individuals caught from proposed activities), and seal remains (from deceased individuals at FFS and from deceased individuals outside PMNM). Bringing seal tissue from outside the Monument is meant to ensure that there is tissue available to use for bait as there may not be the opportunity to collect tissue from a deceased seal at French Frigate Shoals. For all methods, hooked sharks would be pulled into shore or alongside a small boat, tail-rope, and killed with a bangstick. Shark carcasses would be examined (gross necropsy) and sampled for future scientific analyses (isotope, fatty acid, and genetic analysis). Remains would be handled as deemed appropriate by the Native Hawaiian community. Currently, the plans would be to return remains to the ocean outside the atoll (about 0.5 miles beyond the breaking reef at FFS).

The activities are in direct support of the Monument Management Plan's priority management needs 3.2 – Conserving Wildlife and Habitats, through action plan 3.2.1 – Threatened and Endangered Species. This action plan states that “site specific mitigation plans and methods should be developed and implemented” (PMNM MMP Vol 1, p.163). This action plan includes an activity to reduce shark predation on monk seals. Monitoring shark activity and removing sharks are also both listed in the Hawaiian Monk Seal Recovery Plan (NMFS 2007) as necessary activities, critical to the species' recovery.

In addition, activities to support threatened and endangered species in the NWHI are addressed in the Monument Management Plan (MMP) Environmental Assessment (EA). This EA analyses the MMP covered field activities “to monitor predation of sharks on Hawaiian monk seals and its effects, and develop and implement methods to deter predation” (PMNM MMP Vol 2, p.173). The EA states that “these activities could have a beneficial effect on the endangered monk seal by decreasing population loss”.

Consulted Parties:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, the Office of Hawaiian Affairs (OHA), and the Cultural Working Group Permits Sub-Committee. In addition, the permit application has been posted on the Monument Web site since February 12, 2016 giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Exemption Determination:

After reviewing HAR §11-200-8, including the criteria used to determine significance under HAR §11-200-12, DLNR has concluded that the activities under this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit, including monitoring and removal of sharks, have been evaluated as a single action. As a preliminary matter, multiple or phased actions, such as when a group of actions are part of a larger undertaking, or when an individual project is precedent to or represents a commitment to a larger project, must be grouped together and evaluated as a single action. HAR §11-200-7. This permit may involve an activity that is precedent to a later planned activity, i.e. the continued removal of sharks next year if seventeen (17) sharks are not removed this year, or removal of twenty (20) sharks in total over a multi-year period since the project's inception. Subsequent activities will depend largely on the results achieved under this permit.

2. The Exemption Class for Experimental Management with no Serious or Major Environmental Disturbance Appears to Apply. Chapter 343, HRS, and §11-200-8, HAR, provide for a list of classes of actions exempt from environmental assessment requirements. HAR §11-200-8.A.5. exempts the class of actions which involve "basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource." The proposed removal activities here appear to fall squarely under the exemption class #5, exempt item #13 as described under the Exemption List for the Department of Land and Natural Resources published on June 5, 2015. As discussed below, no significant disturbance to any environmental resource is anticipated in the monitoring and removal of a limited number of sharks. Thus, so long as the below considerations are met, an exemption class should include the action now contemplated.

The Applicants would follow Monument Best Management Practices (BMPs) to mitigate threats activities could have on listed species, sea birds, and terrestrial birds. The BMPs include Human Hazards to Seabirds (BMP 003), the Laysan Finch Protocol (BMP 005), Artificial Light on Sea Turtles (BMP 009), Marine Wildlife Viewing Guidelines (BMP 010), and Precautions for Minimizing Human Impacts on Endangered Land Birds (BMP 012). Bycatch would be expected to be minimal based on experience from previously approved permits from 2010 to 2015 (PMNM-2012-013 and PMNM-2013-017, PMNM-2014-023, PMNM-2015-009) and research done by Meyer in 2009 (PMNM-2009-009 and PMNM-2009-036). To avoid the misidentification between Galapagos sharks and grey reef sharks, the minimum size requirement would be set to about 160 cm for removal and an absence of the dorsal ridge seen in grey reef sharks.

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Potentially Particularly Sensitive Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if "the cumulative

impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.” HAR §11-200-8.B. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment. HAR §11-200-12. Examples of actions which commonly have a significant effect on the environment are listed under HAR §11-200-12.

This project would continue shark removal activities that were undertaken in 2007 and 2010 to 2014, under permits PMNM-2007-025, PMNM-2010-014, PMNM-2011-007, PMNM-2012-013, and PMNM-2013-017, PMNM-2014-023, and PMNM-2015-009; which had no deleterious effects on Monument resources. Possible adverse effects on the coral reef ecosystem at French Frigate Shoals (FFS) from shark removals were investigated using the EcoSim model (Parrish, NMFS). Results from that work indicated that the removal of 20 sharks had a nearly imperceptible effect on the dynamics of the FFS ecosystem. With that in mind, significant cumulative impacts are not anticipated as a result of this activity, and numerous safeguards further ensure that the potentially sensitive environment of the project area will not be significantly affected. All activities will be conducted in a manner compatible with the management direction of the Monument Proclamation in that the activities do not diminish monument resources, qualities, and ecological integrity, or have any indirect, secondary, cultural, or cumulative effects. The joint permit review process did not reveal any anticipated indirect or cumulative impacts that would occur as a result of these activities. These activities would be conducted from the seasonal monk seal field camp based on FFS. The operation of the field camp, and associated monitoring activities, are covered under the Manager’s permit PMNM-2016-001.

There is the potential that two ships may be in the Monument during this time frame. The NOAA Ships HI’IALAKAI (PMNM-2016-006) and the SEARCHER (PMNM-2016-001). The activities supported by these ships are permitted separately. The SEARCHER would support three proposed activities, Springer (PMNM-2016-017-A1) and Bird-Toonen (PMNM-2016-026-A1) which are both amending their 2015 permits to conduct intertidal activities at Nihoa, Mokumanamana, French Frigate Shoals and Gardner Pinnacles. The third proposed activity would be conducted by Applicant Rubinoff (PMNM-2016-018) to research the endemic moth – the Hawaiian Hyposmocoma – at all terrestrial locations in PMNM (accessible by the SEARCHER). However, Gardner Pinnacles was highlighted as the main research site.

4. Overall Impacts will Probably be Minimal and Insignificant Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit. Specifically, all conservation and management activities covered by this permit will be carried out with strict safeguards for the natural, historic, and cultural resources of the Monument as required by Presidential Proclamation 8031, other applicable law and agency policies and standard operating procedures.

April 8, 2016

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Conclusion. Upon consideration of the permit to be approved by the Board of Land and Natural Resources, the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200 HAR, have been determined to be of probable minimal or no significant effect on the environment and exempt from the preparation of an environmental assessment.

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Suzanne Case  
Board of Land and Natural Resources

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Date